PE-77-2

TERRITORY OF ALASKA
DEPARTMENT OF MINES

PE 77-2

PROPERTY EXAMINATION REPORT

K+77-8
28
29

GRUBSTAKE CREEK PLACER AND COPPER PROSPECT

MINERAL DEVELOPMENT & EXPLORATION CO., INC.

AHTELL CREEK, SLANA DISTRICT, COPPER CENTER PRECINCT

GULKANA QUADRANGLE, ALASKA

By

M. W. Jasper

Territorial Mining Engineer

May 1956

CONTENTS

	Page
INTRODUCTION	I
LOCATION AND ACCESSIBILITY	I
CLIMATE AND VEGETATION	I
Timber	I
WATER SUPPLY	I
TOPOGRAPHY	2
HISTORY AND OWNERSHIP	2
GEOLOGY	3
Mineralization	5
Sampling	6 & 7
CONCLUSIONS	8
RECOMMENDATIONS	8

REFERENCES

U.S.G.S. Bul. 824-B. Pages 112-144
U.S.G.S. Bul. 904. Pages 48 - 50
U.S.G.S. Bul. 943-B. Pages 42 - 44
U.S.G.S. Bul. 989-D. Page 195. Plate 7.

APPENDED

Maps No. I and No. 2.

INTRODUCTION

At request of Robert E. Austin, President, Mineral Development and Exploration Company, Incorporated, 826 8th Avenue, Anchorage, the company's placer property and copper prospect on Grubstake creek was visited July 21st and 22nd, 1955.

LOCATION AND ACCESSIBILITY

The property is located at approximate geographical coordinates Longitude 144° 03' west and Latitude 62° 49' north, near northeast margin of the Gulkana Quadrangle. It is served by a good summer trail and winter "Cat" road which takes off from the Slana-Tok Highway at Mile 58; the distance from the Highway is about 8½ miles.

Grubstake creek is a left limit tributary of Ahtell creek. Flowing southwesterly, the creek is 1 3/4 to 2 miles in length and the upper half lies in a steep narrow gulch. Elevations of the four claims in the gulch range from about 3500 feet at the lower end to 3900 at the upper end.

CLIMATE AND VEGETATION

Summer months are frequently hot and dry in the upper Copper River valley although heavy rains are not uncommon. During winter months there is generally a good deal of sub-zero weather in the district and fairly heavy snowfall, with an average of three to four foot snow depth on the ground.

The Ahtell creek area has a heavy spruce growth up to the 3000 to 3200 foot elevation, with some cottonwood, poplar, and birch of fair size. In the more open sections of the Ahtell valley there is willow and alder, but this growth is not dense. Grass is fairly abundant.

Being in a relatively "dry belt" the area is generally one where travel on foot or horseback is easy.

Timber

There is an abundance of spruce for mine and camp timber in the valley and up to the 3000 foot elevation.

WATER SUPPLY

The water supply has been a problem throughout the history of efforts to work these gravels. A short stream of steep gradient in a narrow gulch and very limited drainage area, the period in which a fair water supply is available is limited to a few weeks or month during the annual run-off in June. The

The stream flow then drops sharply and has proven sufficient only for a "shoveling-in" hand and "booming" operations, using a 10 inch sluice box. Occassionally a short period of heavy summer rainstorms will create a near flood condition and provide a good water supply for a week or ten days.

There is no chance of building water storage reservoirs of any size or practical use, nor are there any creeks available for diversion into Grubstake gulch to increase the water supply.

In the 1930's an effort was made to use the fairly wide flat divide area at head of Rainbow creek (a short left limit tributary of Grubstake creek) as a "catchment" basin for the melting snow and the small flow from headwaters of a Porcupine creek tributary. This effort did not, however, appreciably increase the water supply during the low water period.

A partial solution to augment the water supply would be to collect the water below point of use in a tank or dam and install a pumping unit to recirculate the water for use in a small "giant" or monitor. Before expense of such an installation would be justified, however, the small block of ground of "possible" value in right limit slope of creek should be more thoroughly tested and stream flow measurements be taken.

TOPOGRAPHY

Located in southern fringe of the Alaska Range foothills, the Grubstake drainage basin is one of steep slopes and the mountain ridges surrounding it range from 4200 feet on the south and west to 5000 feet to the east and north.

The gulch gravels (and talus) varies in width from 50 to 150 feet wide along the stream course on lower two claims, and above that to the divide the gulch bottom for the most part is exposed bedrock with small talus along both sides, and very little gravel here and there.

HISTORY AND OWNERSHIP

Grubstake creek has proven to be well named. For the past 30 to 40 years sporadic efforts have been made to work it. Gravels in the creek bottom have been pretty well turned over by hand methods - shoveling-in, ground sluicing, and during short period of maximum water supply a small giant has been used. For a season or two during the late 1930's and/or the early 1940's a D-4 was used in a mining venture by Einar Johnson, Gus Johnson, and one or two other associates.

In 1936 the property was visited by undersigned with Fred Moffit, U.S. Geological Survey, and Lawrence Dewit, Charles Swanson and "Laughing Ole" Olson were working the property at that time (and continued for several years), and Mr. Dewit was associated with them. Swanson and Olson were shovelling-in and ground sluicing, as well as using the small giant during the short period that was possible.

Names of others than those above mentioned who worked the creek from time to time prior to 1936 and since then are not known, but from all reports none of them made more than their expenses at best. While it has not been determined what total production of the creek has been, the writers general familiarity with spasmodic operations there for past 25 years suggests it to be less than $50,000.00.

During the 1955 season production was limited to a few hundred dollars. The company had a D-7 Caterpillar tractor on the job, and most of the season is reported to have been directed to preparing the ground for this years operation. Attention was given to testing the right limit bank in vicinity of and below the camp-site, with objective of proving some oldtimers theory that the original Grubstake creek channel is buried under talus (18 to 30 feet or more in depth) at base of the mountain slope on north side of creek. That work was limited in scope and no positive information was obtained confirming presence of the "possible" old channel, its extent, or values.

Five placer claims were staked and are held by the company.

These are:-

Robbie	Lani	David
Twelve Mile		Stephanie

In addition the Copper Mineral Claim was staked last year to cover the copper showing at head of Grubstake creek.*

Charles Swanson did some prospecting at head of one of the draws tributary to Rainbow creek 20 to 25 years ago. He is reported to have driven an adit 15 feet or so on a quartz vein. Although special effort was not made to find its location, no positive evidence of it was observed during the reconnaissance made to head of Rainbow creek divide.

GEOLOGY

The Grubstake creek area has been mapped as "undifferentiated igneous rocks of various kinds - dark-gray diorite, basic intrusives, lavas, and tuffs; late Paleozoic and Mesozoic".*

* Refer to Map 2, attached.

Except for tuffs (?) on the mountain slopes on north and south sides of the creek from the camp area downstream, the formation appears to largely be limited to the dark-gray diorite. While the washed (rounded) gravels are predominately various igneous types all but the diorite have been carried by glacier movement from a source other than the immediate vicinity.

The abundant subangular tuffaceous "wash" present in the gravels below mouth of Rainbow creek is considered largely talus from the steep mountain slopes along that section of the creek.

The Copper Mineral Claim is located on southeast side and along the N55° to 60°W strike of a "sheeted" quartz stringer zone in the diorite at upper end of Grubstake gulch. This zone has an 70° to 80° northeast dip and is an estimated 80 to 100 feet in width, and carries some copper mineralization.*

Adjoining on the northeast side is an additional 100 feet showing much weaker shearing (fracturing) and few quartz stringers with some iron staining the diorite surface. The next 25 feet to the north is a strongly oxidized diorite zone.*

Adjoining the "sheeted" zone on southeast side there is a 500 to 600 foot width of diorite whose surface is strongly oxidized (iron stained), and the diorite contains some disseminated pyrite.*

The "sheeted" zone does not show on the mountain slope on northwest side of gulch, as the slope there is covered to large extent by small talus which is also fairly well oxidized.

At head of Rainbow creek, an estimated 1000 feet northwest of the divide, and on southwest side of creek at about the 4200 level there is a small area of oxidized diorite which carries some fairly abundant pyrrhotite, pyrite, and a little chalcopyrite. The contact with tuffaceous (?) sediments lies a few feet up the slope.*

Continuing northwesterly, at 300 feet there is an oxidized diorite outcrop with similar mineralization and with same contact nearby.*

At a point about 1200 feet northwest of last point and an estimated 75 feet above Rainbow creek, there is a highly oxidized diorite zone visible for 40 feet on the steep southwest slope. No sulfides were noted.*

Continuing northwest for 200 feet, and at a point about 50 feet above Rainbow creek, there is a weathered, oxidized silicious section in the diorite. A small amount of pyrite and a few traces of malachite were noted.*

* Refer to Map 2, attached for location.

Forty feet further north (and an estimated 500 feet from mouth of Rainbow creek) and 20 feet below, there is a similar oxidized, silicious section in the diorite. There is a little pyrite and a fine silvery white sulfide (probably arsenopyrite) present, but no copper minerals were observed.*

Continuing northwesterly, at point 50 to 60 feet distant and few feet lower, there is a silicious zone in oxidized diorite, similar to and a continuation of the last three described sections. Some pyrite, and lesser amounts of fine grained arsenopyrite and chalcopyrite are present. Width of accessible sections of this silicious zone on the very steep slope is 3 to 5 feet with N10°W strike and 45° to 55° west dip. (Grab sample across 4" only was taken at last point due to wasps nest).*

The high ridge to northeast of Rainbow creek was not traversed. However, the 600 to 800 foot width of the oxidized diorite, upon which the Copper Mineral Claim has been located, appears to be continuous for a mile or more to the southeast, and is a prominent structural feature along south side of ridge crest for length of Rainbow creek basin.

Mineralization

Placer. The gold occurring in Grubstake creek gravels is fairly coarse. Native silver is present in amount somewhat less than the gold. Both the gold and silver generally are rough, showing little abrasion from the gravel moving down stream. The native silver commonly is of dendritic form, and some specimen were seen in the past which showed the "fern like" leaf loosely rolled in a ball up to three eighths of inch in diameter. Gold has also been reported found of dendritic form. These occurrences give rise to belief by some that their origin is strictly local; with none of this type found above mouth of Rainbow creek, its source is thought to be from basin of this stream. However, some well worn gold has been seen taken from Grubstake which suggests a more distant source.**

Efforts to date to locate gold or silver bearing veins or lodes in this drainage basin have been unsuccessful to date. The "sheeted" zone, upon which one copper claim has been filed, could possibly be one source but that seems doubtful.

Native copper, well rounded, is commonly found in the sluice boxes. Glacial action and movement in the Copper River region has been responsible for its distribution over a wide area, but at no known place has it been reconcentrated from glacial debris in amounts of economic interest.

* Refer to Map 2, attached.
** Refer to U.S.G.S. Bul. 904, Page 49.

Magnetite is the most abundant mineral found in the sluice box concentrates, and it occurs "as sand, pebbles, and larger pieces".*

A little ilmenite is also reported. Other heavy minerals may be present in the gravels but a complete analysis has not been made of the concentrates.

The concentrates were checked last summer with a geiger counter but no radioactive minerals were determined to be present.

Lode mineralization. The "sheeted zone" upon which one mineral claim was staked last year carries a little malachite and minor amounts of pyrite and a very little chalcopyrite were examined in cliff face below the discovery post. The wide oxidized section of diorite on both sides of that zone show some disseminated pyrite; while no chalcopyrite was noted it is possible that more thorough investigation and sampling in those areas may prove it to be present in small amounts.**

In April 1955 Mr. Robert Austin brought in a hand speciman which showed very encouraging radioactivity when checked with a Gieger counter. In physical appearance it was identical in appearance to the "sheeted" zone (of closely spaced "frozen" quartz stringers) in vicinity of the Copper Mineral Claim discovery post. Going over this latter area with a Geiger counter failed to find any radioactive sections, although several points suggested radioactive minerals present "in place". However, samples taken of these anomolies were removed to camp and testing there proved to be negative. Mr. Austin stated the speciman mentioned above was piece of "float" which he found near foot of south mountain slope near camp (left limit of creek).

The several oxidized and silicious sections in the diorite sampled on slopes of Rainbow creek's west side carries varying amounts of pyrite, a little chalcopyrite, and very minor amounts of malachite, and arsenopyrite.**

At one point (sample No. S-Gr) a few fine grains of bornite (?) were observed.

Sampling

Eight samples were taken; their location and description follow:-

* Refer to U.S.G.S. Bul. 904, Page 49.
** Refer to Map 2, attached.

Sample Results

Sample No.	Width in.	Au oz	Ag oz	Cu %	Description
1-Gr	120	nil	0.20	0.09	Copper M.C. Bluff below Disc. Post. "Sheeted" zone - numerous "frozen" quartz stringers in diorite. Abundant malachite stains along fractures. Little pyrite & chalcopyrite.
2-Gr	72	nil	0.94	0.11	Continuation of No. 1-Gr to west. Fewer quartz veinlets. More abundant malachite. Little fine grained pyrite.
3-Gr	Grab	0.08	0.22	nil	Grab - 3 pieces weathered, oxidized diorite with some pyrite, pyrrhotite, and few grains chalcopyrite. Contact area. Rainbow creek area.
4-Gr	Grab	tr	0.20	nil	Oxidized diorite zone. Mineralization similar to sample No. 3-Gr. Rainbow creek area.
5-Gr	36	0.02	0.42	--	Highly oxidized diorite. No sulfides noted. Rainbow creek area.
6-Gr	42	nil	nil	--	Silicious section in oxidized diorite. Little fine grained pyrite and occassional trace of malachite. Rainbow creek area.
7-Gr	36	nil	0.20	--	Similar to and a continuation of silicious section at sample No. 6-Gr. Some pyrite and few grains of silvery white sulfide (arsenopyrite?). Rainbow creek area.
8-Gr	Grab(4')	nil	0.60	tr	Similar and continuation of silicious section sampled at No. 7-Gr. Full width of section (5 ft.) not sampled account of wasps nest. Rainbow creek area.

Note: All samples checked for radioactivity but none found.

Refer to Map 2 for location of samples taken.

CONCLUSIONS

Placer mining efforts by numerous individuals since the creeks discovery resulted in working of all the limited yardage in bottom. Average value per cubic yard of mined creek bed is not known; it may have run $1.00 to $2.00. The creek has been and will continue to be handicapped by lack of sufficient water, as there is no other supply source which would have been practical to develop for the limited yardage THAT WAS available. The small scale inefficient mining methods it was necessary to use in the past, due to the water shortage, was further handicapped by shortness of the season.

There is the long "chance" that an old channel of Grubstake exists under the talus slope on right limits of creek, as some oldtimers have believed, but its presence, width, lateral extent, and possible value remains to be proven. It is considered that best method to prove and locate such a channel would be to run a "drift" or "drifts" a few feet above and more or less at right angles to the creek in the camp area. Should an old channel be found carrying exceptionally good values, it will be more practical to drift mine the bedrock gravels, rather than plan to move the medium coarse, overlying talus of considerable depth with dozer or other mechanical equipment, due to lack of water supply to carry the waste material away.

However, no evidence has been personally observed supporting the theory that such a channel exists on either side of Grubstake creek.

The mineralized "sheeted" quartz stringer structure on the Copper Mineral Claim, as well as the wide adjoining oxidized diorite zone, extending about one mile easterly, justify prospecting and sampling for low grade copper and gold values.

RECOMMENDATIONS

Conclusions drawn from personal examination of the creek last year and in 1936, as well as the history of the unprofitable mining done at intervals over a period of 30 to 40 years (or more), does not justify recommending a development or mining program. There is not considered to be a reasonable expectation of their being an old channel on north slope of gulch, or should their be, that it would contain sufficiently high values to make it profitable to work by drift mining or other methods.

However, should the present owners or their successors be determined to go ahead with this project, the one "long chance" is to prospect for their assumed old channel, and to thoroughly sample the right limit bank at numerous points. Mr. Austin has reported getting "good prospects" at six points in a 20 foot vertical face, but that testing was not properly done and is not conclusive.

It is recommended the mineralized "sheeted (quartz stringer) zone" on the Copper Mineral Claim should be traced up the steep mountain slope and sampled across its mineralized width at intervals of 50 or 100 feet for length of the structure or at least for distance of 500 to 1000 feet.

It is also recommended that the wide oxidized diorite zone, which lies on south side of above mentioned structure, and extends easterly for one mile be prospected. These zones might be found to carry sufficient low grade copper and gold values to be of real interest.

Martin W. Jasper

Territorial Mining Engineer

Anchorage, Alaska
May 19, 1956

May 19, 1956

COPY

Mr. Jess Morrison,
Brady's Floor Covering,
330 Fourth Avenue,
Anchorage, Alaska.

Dear Mr. Morrison:

RE: Grubstake Creek Report
Mineral Exploration &
Development Co., Inc.

Enclosed you will find two copies of report made on the Grubstake Creek property.

As I understand that Robt. Austin is not active in the company, and not knowing his address, the second copy can be forwarde to him by you if you so desire, or to others who may now be associated in that venture.

Very truly yours,

Martin Jasper
Territorial Mining Engineer

cc: PHH

May 18, 1956

COPY

Mr. Robt. F. Lyman,
Crooked Creek, Alaska.

Dear Bob:

RE: Parks HgS Report
REF: Your May 13th letter

Your above letter received May 15th.

As per your request I am forwarding copy of my report on the Parks prospect to Dean Earl Beistline in the morning.

Did not have any extra copies of map and report, so was delayed in getting them off until got some more copies typed and printed.

Trust that the high water along the river contiued to miss you - from all reports it has been a bad year for floods at many places, with section below Bethel remaining the only trouble spot.

With kind personal regards to Mrs. Lyman, the family and yourself,

Sincerely yours,

Martin Jasper
Territorial Mining Engineer

How is production progressing at the Red Devil?

Noted your advice re George Willis activities with interest.

M J

cc:PRH

May 18, 1956

COPY

Dean Earl Beistline,
School of Mines,
University of Alaska,
College, Alaska.

Dear Earl:

RE: Parks HgS Prospect
REF: R. F. Lyman request 5/13/56

Received request from Bob Lyman on May 15th to forward copy of my Preliminary Report of the property he and George Willis have acquired.

As noted in the report spent only half a day on the ground, as it seemed desirable for them to finish their stripping and make a more detailed study of the occurrences this spring.

It is a most interesting showing.

Now that the school year is finished suppose that you will be getting out on some field work, and change the classroom pulor.

With kind personal regards, in haste,

Sincerely yours

cc:R. F. Lyman

✓cc:PRH

May 18, 1956

COPY

Mr. Lowell B. Moon, District Geologist,
Bear Creek Mining Company,
West 1017 Riverside Avenue,
Spokane, Washington.

Dear Lowell:

RE: Parks HgS Prospect Report
RMF: Robt. F. Lymans May 13th request

Enclosed you will find copy of my preliminary report on the Parks prospect, which Bob Lyman has requested be forwarded to you.

We are looking forward to your next trip up this way. With spring at long last "in season" here it will not be long before you get your program underway in the Chitina river region.

With kind personal regards, and again with sincere thanx for giving so freely of your time to the local AIME section last March,

Very truly yours,

Martin Jasper
Territorial Mining Engineer

cc:RFL

cc:PRH

May 19, 1956

COPY

Mr. Fred Bronnicke,
Gakona, Alaska.

Dear Fred:

RE: Ahtell Creek Au-Qtz Prospect

Enclosed you will find two copies of my report on your gold-quartz property, with two maps attached. Lack of economic values to date is disappointing.

Going to take the balance of month off.

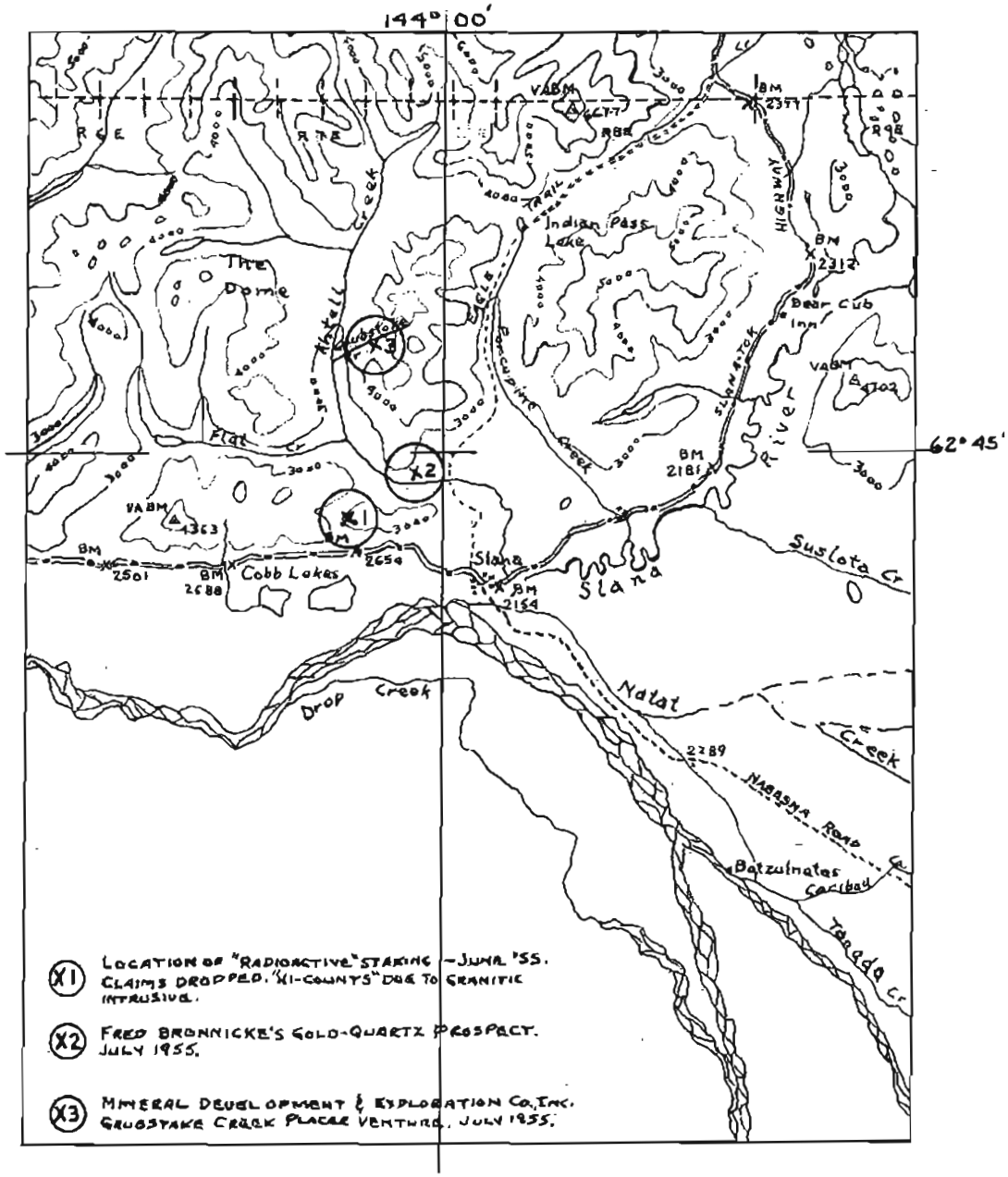
I am recommending you for job prospecting as soon as the man looking for some who can be depended upon arrives here sometime next week. He asked me (by mail) early this week to recommend. Soon as he returns will contact him, and if he has not engaged a couple men on the way north either he or myself will try to get hold of you thru Duffy's. If convenient you might give me a call a home next Thursday nite - phone number is 65575.

With best wishes to both of you,

Sincerely yours,

Martin Jasper
Territorial Mining Engineer

cc: PRH



KEY MAP

OF

ANTELL CREEK - SLANA RIVER AREA

TAKEN FROM

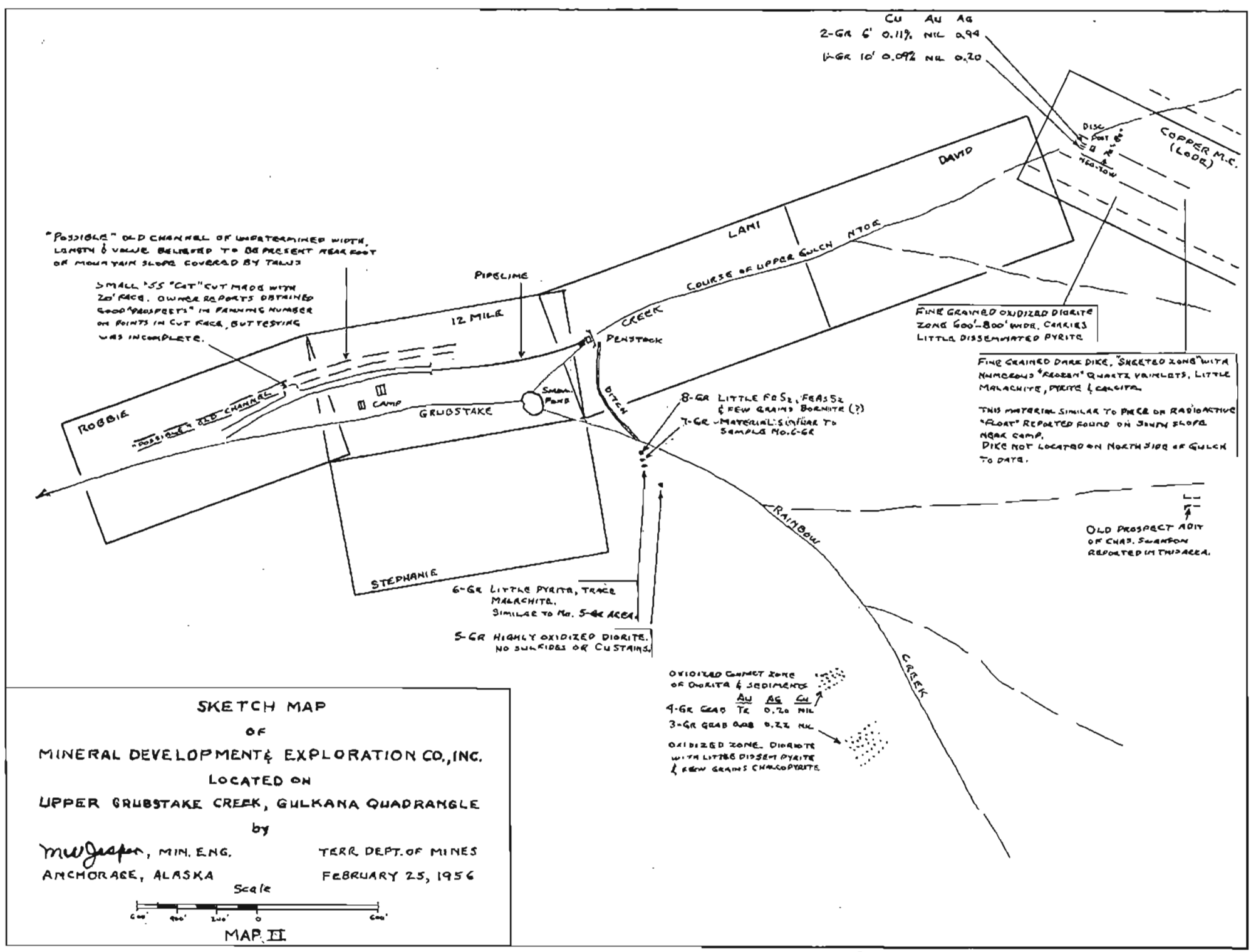
U.S.G.S. GULKANA & NABESNA QUADRANGLES

by

MW Jasper, MIN. ENG., TERR. DEPT. OF MINES
ANCHORAGE, ALASKA FEB. 23, 1956

Scale

MAP I



SKETCH MAP

OF

MINERAL DEVELOPMENT & EXPLORATION CO., INC.

LOCATED ON

UPPER GRUBSTAKE CREEK, GULKANA QUADRANGLE

by

M. W. Jasper, MIN. ENG. TERR DEPT. OF MINES

ANCHORAGE, ALASKA FEBRUARY 25, 1956

Scale

600' 300' 200' 0 600'

MAP II